



Generator Interconnection Facilities Study

SCE&G V.C. Summer Nuclear #3 – Revision #2

Prepared for:
SCE&G Nuclear Group

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May 27, 2008 – Revision #1
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SCE&G Transmission Planning

May 29, 2008 – Revision #2

This revision renames and rearranges one of the associated projects in the narrative and in the cost estimate table for clarification. The rest of the report is unchanged and included in its entirety.

May 27, 2008 – Revision #1

This report corrects a double entry line item in the cost estimate for the VC Summer #3 interconnection. The rest of the report is unchanged and included in its entirety.

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Generator Interconnection Facilities Study

SCE&G V.C. Summer Nuclear #3

A Generator Interconnection Facilities Study is an extension of the previous Generation Interconnection System Impact Study, and specifies and estimates the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the Interconnection System Impact Study in accordance with Good Utility Practice to physically and electrically connect the Interconnection Facility to the Transmission System. A Generator Interconnection Facilities Study also identifies the electrical switching configuration of the connection equipment, including, without limitation: the transformer, switchgear, meters, and other station equipment; the nature and estimated cost of any Transmission Provider's Interconnection Facilities and Network Upgrades necessary to accomplish the interconnection; and an estimate of the time required to complete the construction and installation of such facilities.

General Discussion

The SCE&G Nuclear Group has applied for interconnection of a new 1375 MVA nuclear generator near the existing V.C. Summer site. This new generator would be the third nuclear generator on this site and would be jointly owned by SCE&G and Santee Cooper, SCE&G would own 55% and Santee Cooper would own the remaining 45%. In this study Santee Cooper's portion of the generator output was represented as delivered to the Santee Cooper system.

The previously completed System Impact Study for VC Summer #3 recommended the following transmission line improvements:

1. 230KV Switchyard Additions for Unit #3 - Add six (6) 230kV terminals (8 breakers) at VC Summer New using breaker-and-a-half design
2. Construct VC Summer New-St George 230kV Double Circuit B1272 line (135 miles)
3. Construct VC Summer New-VC Summer #1 Bus #1)
(Add 230kV terminal at existing VC Summer #1 Bus #1)
4. Construct St George 230kV Substation using breaker-and-a-half design
5. Fold-in the Canadys-Santee 230kV line at St George 230kV
6. Upgrade the Canadys-St George 230kV line to B1272
7. Fold-in the Wateree-Summerville 230kV line at St George 230kV
8. Upgrade the St George to Summerville 230kV line to B1272
9. Upgrade Saluda-Georgia Pacific 115kV Double Circuit line to 1272
10. Install a 230kV Series Reactor (25% on a 500 MVA base) on the VC Summer #1-Newport (Duke) 230kV line

Replace overstressed breakers

11. Three (3) 230kV breakers
12. Eight (8) 115kV breakers

In the future, SCE&G Transmission Planning will periodically review the results of this Interconnection Facilities Study to determine if the recommended transmission expansion and the associated cost estimates remain valid.

I. Generator Information

The generator design consists of a single nuclear unit and one step-up transformer. The generator unit will have a maximum gross MVA output capacity of 1,375 MVA and a maximum continuous net MW of 1,165 MW.

The generator design consists of the following information:

MVA – gross:	1375
MW – net:	1165
Power Factor:	between .90 and 1.05
Voltage:	22kV
Speed:	1800 rpm
X'd-sat.: 0.465 PU;	X''d-sat.: 0.325 PU
X2-sat.: 0.320 PU;	X0: 0.237 PU

II. Cost Estimates of Transmission Provider's Interconnection Facilities and Network Upgrades and Completion Dates

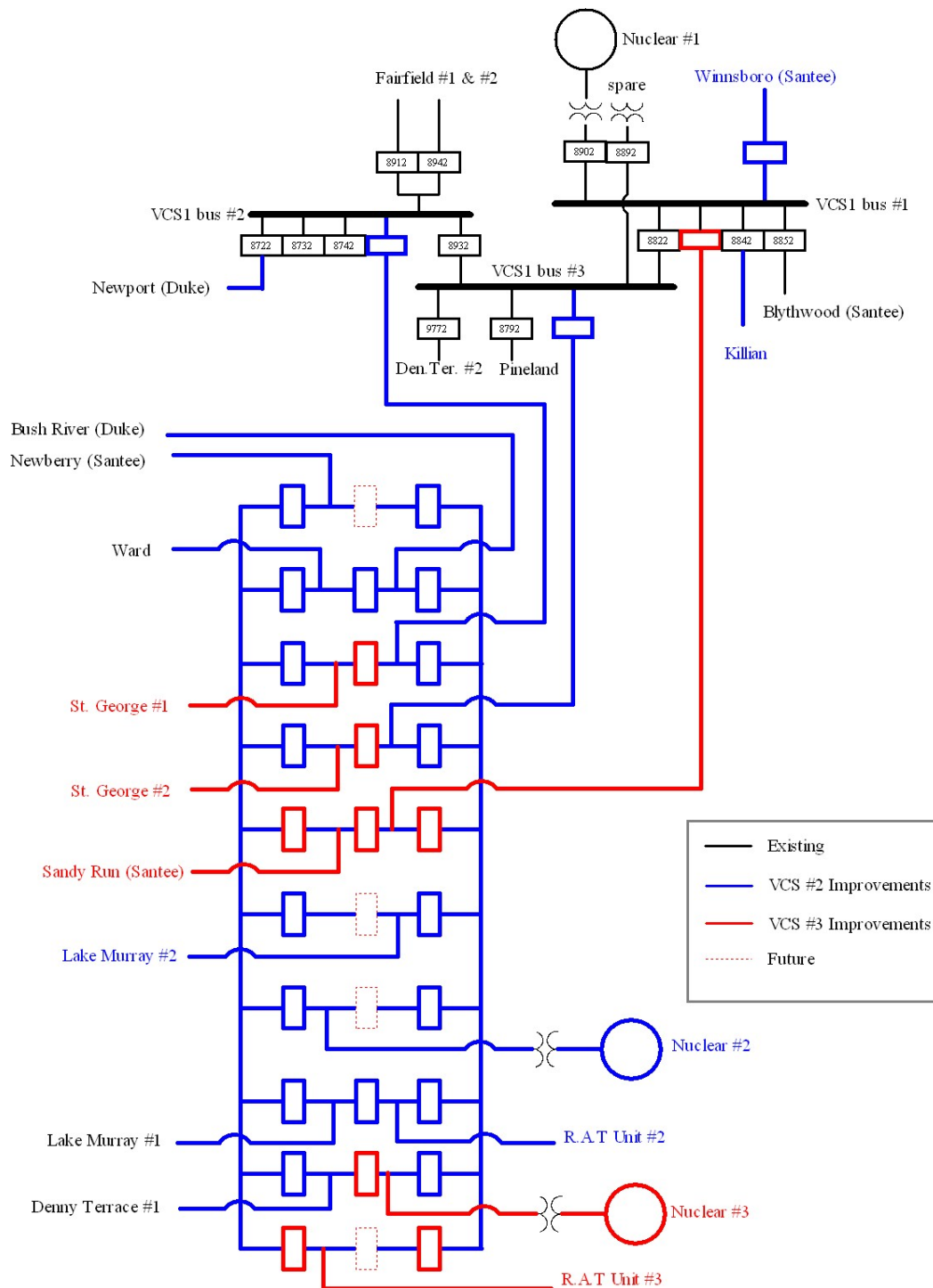
The Table below includes the cost estimate for the required Transmission Provider Interconnection Facilities, the required Network Upgrades and the estimated completion date for each of these required projects.

VC Summer Unit #3 Transmission Cost Estimates
Escalated at 4% per year from 2008

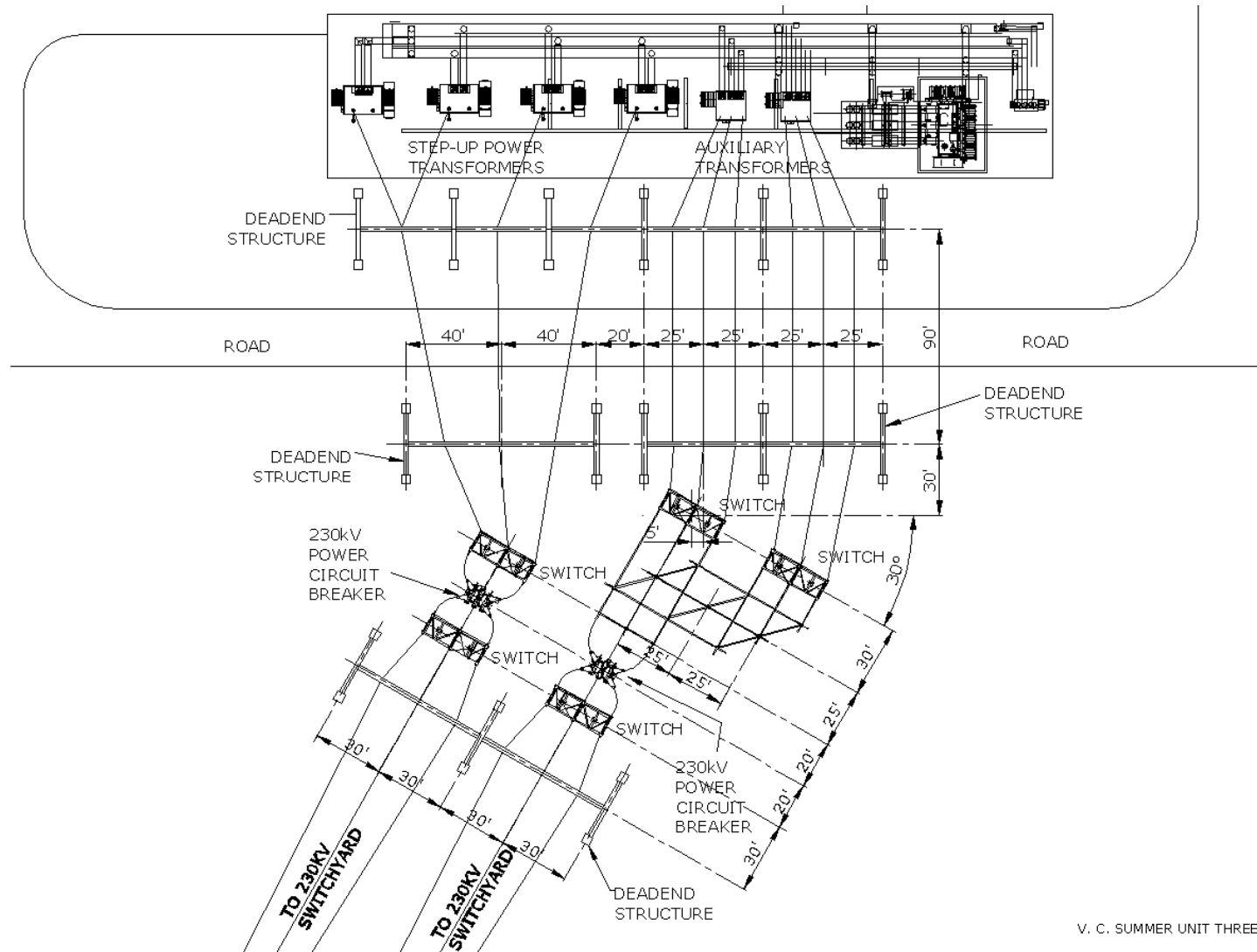
Project Name	Schedule d End Date	Budget 2008	Budget 2009	Budget 2010	Budget 2011	Budget 2012	Budget 2013	Budget 2014	Budget 2015	Budget 2016	Budget 2017	Budget 2018	Totals
230KV Switchyard Additions for Unit #3 - Add six (6) 230kV terminals (8 breakers) at VC Summer New using breaker-and-a-half design	12/1/2018									700,000	6,400,000	11,800,000	18,900,000
VCS #2 to St. George 230kV - Construct b1272 line (135 miles)	12/1/2018								500,000	1,500,000	100,000,000	144,320,000	246,320,000
Summer Unit #3-230KV Tie to Bus #1 – Construct (Assume 0.75 mile)	12/1/2018											960,000	960,000
VCS #1, Bus #1: Add Term to VCS #2 Sub	12/1/2018											1,760,000	1,760,000
VC Summer Unit #3 to #2 Sub 230kV Line: Const	12/1/2018											600,000	600,000
VC Summer RAT #3 to #2 Sub 230kV Line: Constr	12/1/2018											600,000	600,000
St. George 230kV Switching Station: Const Brkr ½	12/1/2018									240,000	8,000,000	10,000,000	18,240,000
Canadys - Santee 230kV: Fold In to St. George 230kV	12/1/2018											1,760,000	1,760,000
Canadys - St. George 230kV: Upgrade to B1272	12/1/2018									680,000	4,000,000	7,000,000	11,680,000
Wateree - Sum'ville 230kV: Fold In to St. George 230kV	12/1/2018											1,760,000	1,760,000
St. George - Sum'ville 230kV: Upgrade to B1272	12/1/2018									480,000	8,000,000	16,000,000	24,480,000
Sal Hydro - Ga Pac 115kV Double Ckt: Upd to 1272	12/1/2018									100,000	8,000,000	11,000,000	19,100,000
VCS #1 Sub: Add 230kV Series Reactor in Newport Duke Line	12/1/2018										1,100,000	5,000,000	6,100,000
Various 230KV PRCB Upgrade Interrupter Rating (Assume 3 PRCBs)	12/1/2018											1,056,000	1,056,000
Various 115KV PRCB Upgrade Interrupter Rating (Assume 8 PRCBs)	12/1/2018											1,920,000	1,920,000
		0	0	0	0	0	0	0	500,000	3,700,000	135,500,000	215,536,000	355,236,000

III. Facilities Classifications

The Facilities Study report must identify and estimate the cost of any Transmission Provider's Interconnection Facilities and Network Upgrades necessary to accomplish the interconnection. The diagram below includes color coded indications of which facilities fall into the classification of Network Upgrades, Transmission Provider's Interconnection Facilities or Interconnection Customer's Interconnection Facilities. Cost estimates for all Network Upgrades and Transmission Provider's Interconnection Facilities are included in Section II of this report.



IV. Electrical Switching Configuration



V. C. SUMMER UNIT THREE

V. Facilities Diagram with VC Summer #2 and VC Summer #3

